From boatanchors@theporch.com Thu Apr 13 14:39:08 1995
Date: Thu, 13 Apr 1995 11:04:29 -0500
Message-Id: <797788910.4576338@AppleLink.Apple.COM>
From: FRANCIS4@applelink.apple.com (Francis, Dexter)
Subject: Re: 1750 m vs. 1700 kHz

I guess the server musta eaten my public confession of decimal slipitis.
So, I'll shoot it off again...

Oops! Sorry. Slipped digits. Obviously 1750 meters CAN'T be 1700 kHz.
(I must admit to it being partly some wishfull thinking on my part...)

-df

From boatanchors@theporch.com Thu Apr 13 20:25:06 1995
Date: Thu, 13 Apr 1995 17:53:55 -0500
Message-Id: <F4DH5157.F4DH5208@mail.admin.wisc.edu>
From: TOM.A.ADAMS@mail.admin.wisc.edu
Subject: 1750 M. to Hawaii

to: boatanchors@theporch.com

Hello Jeff.

The mainland to Hawaii path has already been spanned on 1750 metres. Sorry about that.

Mr. T.

From boatanchors@theporch.com Thu Apr 13 12:15:25 1995
Date: Thu, 13 Apr 1995 08:40:54 -0500
Message-Id: <199504131338.JAA07236@cc01du.unity.ncsu.edu>
From: rdkeys@unity.ncsu.edu
Subject: Re: 1750 METERS Happy Happy Joy Joy

>
> On Wed, 12 Apr 1995 rdkeys@csemail.cropsci.ncsu.edu wrote:
>

> > p.p.s. with loose couplers, band-pass filtering, careful tuning,
> >   and a decrement of 0.1, maybe even a class B wave would be
> >   workable down there..... (:+}}.....
>
>   *Baaaaahhhhhb!* Tch, tch--*spark?* Why not rig up an old *arc*
> rig--one of those carbon and alcohol-drip jobs? They've a much purer
> wave, you know, which makes it easier to get a decent decrement.

Well, I was thinking that IFF a spark was set up correctly into a well shielded box/faraday cage, etc., and coupled through a good 3 or 4 section bandpass filter to a tuned antenna system (rhather than like in the old days, just directly coupled or inductively coupled through a very low Q tank directly to the antenna, then perhaps one could meet the magic 40db number. IFF that could be met, then from the technical point of view, spark would still be workable. Crude, but workable, and hell, much more fun than transistors, right? Probably best with a quenched gap at about 10kv input (that would be about a 4 section quenched gap, and maybe a HV neon sign transformer for power).

As to the arc, yep, that would be a very good CW generator at that frequency, just as in the old days. A proper arc rig would be a bit more complicated to put together than a proper spark rig. It would require a hydrogen gas tank (a lecture bottle would do) or an alcohol drip mechanism and some rather sophisticated carbon movement mechanism to properly strike and withdraw the carbon without extinguishing the arc flame. The only attempt at an amateur arc that I have ever seen was about 7 years ago at the Antique Wireless Association meet up in Rochester, where a fellow built an arc that was supposed to work at 200 meters (most arcs function best at 700-10000 meters).

>
>   ...All you need now is a Kolster Decremeter. Shouldn't be too
> expensive, considering there hasn't been much call for them since around
> 1930!

I saw one, once, but back then did not really know what it was.
My dad used to tell stories of checking decrements with his Koster Decremeter aboard the SS Calawaii back in 1924 (he was Jr op aboard).
It would not be too hard to build one, from R.A. Kolster's design specs in one of the early Bureau of Standards Bulletins from about 1922 or so I think was the date. But yer right, the call for them babies has bin nil, lately..... (:+}}.....

>
>   Of course a nice self-rectifying rig with a 400-cycle supply would be
> fun. For that matter, d'ye remember "resonant" power-supply filters?
> Strips out the fundamental hum, but leaves all the harmonics! Sure to be

> distinctive. Might irk some of the ultra-techy amongst the Lowfers, however. :)

There were many amateur designs of the early 1920's that used half or full wave self-rectifying sets. Look in George Sterling's The Radio Manual, 1st ed, 1927, and there are several commercial designs shown that were used on the marine bands (like the RMCA ET-3xxx rigs). Those would be easy to redo, using something like a pair of 813's or a pair of 6146's to give 100-200 watts output, as original.

The problem with self-rectifying rigs is obtaining the MCW musical note. 60hz power only gives a 120hz modulation note. 400 hz would be nice at an 800hz note, or 500hz at a 1000hz note (common in shipboard usage back then). Maybe one could find an old 400 cycle aircraft generator and some associated 400hz power transformers out of something like a GO junker or a GP junker and use them (kindly DON'T tear up a collectible BA piece unless it is just a parts mode model).

I don't remember the LF freq ranges on the GO or the GP, but maybe they would go down that far, as was. The bottom edge of the ARC-5 190-550 rx might just make it down to about 185 khz. There should be a lot of things that would go down there without too much fiddling. But, I would prefer winding a Hartley coil and building a simple 1 tubeeee with a 1 or 2 tube regen receiver to compliment it. Sounds like a fun project.

>
> (Forsooth, I would not mind hearing more about 1750m--though unless the proper LF coil for the HRO-5 falls out of the sky, I probably won't be able to do much with the information!)

Throw yer HRO-5 coils in with the chicken's teeth, since, from my experiences, a good TRF will go rings around the HRO. Use something like the RAK, 128AY, AR-8510, etc., and you will be much better off. Even a good detector and one step using something like a 6SN7 would do well down there, although would not compete with the techhies and their ultraslow modes. But, remember, we are talking boatanchors here, right?

Take the Hartley oscillator article in the BA archives and scale the coil up by about 4-6 times and the tuning capacitors up by about 3-4 times, and it should be in the ballpark. With 90-180 volts on the plate, it would be in the 1 watter category, for playing purposes. The bypasses might need scaling up by about a factor of 2-4 times.

>
> 73,
> --Bobbi

>

73 Bobbi, TU fer da discussions......

Bob/NA4G

From boatanchors@theporch.com Thu Apr 13 17:25:07 1995
Date: Thu, 13 Apr 1995 13:53:10 -0500
Message-Id: <199504131852.OAA06897@cc01du.unity.ncsu.edu>
From: rdkeys@unity.ncsu.edu
Subject: Re: 1750 METERS Happy Happy Joy Joy

>
> >It would not be too hard to build one, from R.A. Kolster's design specs
> >in one of the early Bureau of Standards Bulletins from about 1922
> >or so I think was the date.

I think I have that bulletin. It was reprinted a couple of times, and covered meters and rf measurements, IFF I am remembering the right one. We have all of those in the govdocs --- mebbee me run over there tomorrow or tonight and give it a lookeesee. It was one of those things I perchance stumbled across while paging volume by volume through the govdocs one day. Also, there is a neat NBS circular from about 1922 or 23 that covers how to build an early radio receiving station, loose coupler and all. It was also reprinted in a book entitled ``Radio'' by someone whose name I forget right off, and dated 1923 or so (John R. Irwin comes to mind, but not sure).

>
> I just checked the on-line catalog here (NBS), but didn't find much - I'd
> have to go and actually look into the card catalog, stand in front of the
> stacks, or even ask a reference librarian!

I rarely trust online catalogues for the ancient docs, but usually page or volume my way across particular sections that look interesting, like the navy section N19 or the army section D101, etc.

>
> With enoug other things to do, I might not get to this unless someone is
> REALLY going to build one.

Let me see if I can find it again, and then get back to you.

If anyone has Fleming's 1916 book on radio, it might also be in there, somewhere.

Didn't R.A. Kolster work for the NBS back about 1915 or so?

```
(foggy foggy memory grey matters thinking here....)

>
>
> --
> Roy --
>
> Roy Morgan / Tech A-266 / NIST / Gaithersburg  MD 20899
> (National Institute of Standards and Technology,  formerly NBS)
> 301-975-3254 Fax: 301-948-6213 Internet: morgan@speckle.ncsl.nist.gov
> ---
>
>

73/Bob/NA4G


From boatanchors@theporch.com  Thu Apr 13 12:06:38 1995
Date: Thu, 13 Apr 1995 08:57:45 -0500
Message-Id: <199504131356.JAA13261@cc01du.unity.ncsu.edu>
From: rdkeys@unity.ncsu.edu
Subject: Re: 833A's

>
> Hello Bob (NA4G),
>
> Your comments on the 833 tube inspired me to offer a
> personal reminiscence.
>
> In the early 1960's, my "Elmer," W7TFD, was chief engineer
> of KLGN, a 1 kW (daytime) AM station in Logan, Utah.  W7TFD
> used to let me visit the station at night while he was pruning
> things.

I love it!   Oh, drool..... (:+}}.....

> The rig sported a pair of 833's modulated by a pair of 833's.
> When the final tubes developed gassiness, they'd be put into
> the modulator.  Then a fresh pair would go into the final.

SOP from what I have heard.  That way you get extra life expectancy
out of 100 buck tubies.

> The rig was set up so that, when the doors were opened, there
> were the tubes, sorta naked, staring you in the face.  The
> tubes had no sockets but were, instead, suspended from clips
> that attached to the external caps that were connected to,
> respectively, the filament, grid, and anode leads.  Neat.
```

Very neat, and easy to work on.

Sounds like one of the RCA rigs. BT-1 or something like that, I think. I have a catalogue from RCA listing that as their bottom end AM rig, back about 1960.

> I was a wide-eyed lad of 13 at the time. That broadcast transmitter left quite an impression, as I've loved the look of 833's ever since. And I love the sound of the fabulous, home-brew 833 setup that I have heard for so many years manned by Les, K6HQI, on 14.286 Mc.

There is a nice 833 amp in the 1979 handbook that is fairly workable.

833's are good, rugged, relatively cheap workhorses, still in production. The Chinese 833C's are pretty good graphite anode tubes, from what my bcst engineer friend tells me. The best are supposedly the Eastern Block (Chechoslovak?) tubes.

> Yes, the wonders of big, convection-cooled triodes. Those sure make my 8877 linear seem to lack personality.
>
> By the way, what is your estimation of the 810's that modulate the KW-1?

810's are fine modulators. If you want to go biggie, then stick with 849's (hard to get these days) or 833's (relatively common). I get the pulls from a local bcst engineer, as he runs across them. In amateur service, even the pulls work fine for most uses.

The tube runs well on any voltage from 500 to 3000, and is quite satisfactory for DC to 30 mhz operation at full tilt, and something like up to 100 mhz at reduced power. 10v at 10a for filament power does keep ReddyKilowatt happy and heats the shack nicely in winter (Boatanchor Standard Operating Procedure No. 1).

Tube sockets for 833's are scarce as chicken's teeth, but once in a great while can be found. They are not hard to make, out of 1/2 inch copper refrigeration pipe.

To me, the 833 is the UV-204A of the late tube era (50's-90's). Remember that it was designed in 1937 (1938?), and has been in continuous production ever since. That is a very respectable career for a very respectable tube design.

> 73 de Bob, K0KR

73/Bob/NA4G

p.s. I have been working up a 4 foot long breadboard hartley for
      160 meters using an 833. Mebbee I need to get that mutha
      finished this summer, for the next top band rally.... (:+}}.....

From boatanchors@theporch.com Thu Apr 13 17:35:01 1995
Date: Thu, 13 Apr 1995 14:13:14 -0500
Message-Id: <199504131912.PAA08299@cc01du.unity.ncsu.edu>
From: rdkeys@unity.ncsu.edu
Subject: Re: 833A's

>
> Bob,
>
> >p.s. I have been working up a 4 foot long breadboard hartley for
> >   160 meters using an 833. Mebbee I need to get that mutha
> >   finished this summer, for the next top band rally.... (:+}}.....
>
> I'm still waiting for your report on the 833 regen receiver to go with the 833
> Hartley on low band!
>
> Russ W2DYY
>
> schroeder.wbst207v@xerox.com
>

Boyssssseee, if youse fellers con me inta makin' a detector an' one step using UV833's (hee, hee), someone better take a picture of it for posterity, cuz that would be one of the biggest regen sets ever built!

Lessee, I got an 8 inch bakelite coil form, a couple of 100pf kw bread slicers, and mebbee use a 50lb 10h 1A choke for the plate reactor, an' mebbee a 400v/110v 1kva transformer for the audio output to a pair o' Brandes Admirals, a couple o' 105ah nicads for filament supply, a stack o' 12v 1.2ah batteries for the plate supply, an'......
Hmmmmmmmm, sounds like a winner to me.....!

Happy Happy Joy Joy......

73/Bob/NA4G

From boatanchors@theporch.com Thu Apr 13 17:06:50 1995
Date: Thu, 13 Apr 1995 13:35:02 -0500
Message-Id: <2F8D98A8@pcgateway.netrix.com>

From: cgould <cgould@netrix.com>
Subject: ASTRO C CUBIC RT-1393

Ok BAers,
This is sort of a modern transceiver compared to most of whats on here.
But I have a RT-1393 Cubic ASTRO C that will work fine in AM and CW but both upper and lower
sidebands inhibit. I have checked out and fixed the microprocessor board and have started trouble-shooting the Modulator Board. There are some common components for sideband only that I am still checking here. The specific symptom is when I try to put any audio what so ever
on the input to the modulator it cuts out immediately. My Reference oscillator is right on the button. Since all of the RF is controlled by the computer I had suspected the processor board.
But I now have all the right enable lines so I am approaching critical mass. Does anyone have
any additional ideas? If sure is a nice rig when it works...
73
CGOULD@NETRIX.COM

From boatanchors@theporch.com Thu Apr 13 14:04:39 1995
Date: Thu, 13 Apr 1995 10:27:39 -0500
Message-Id: <199504131527.LAA27122@cc01du.unity.ncsu.edu>
From: rdkeys@unity.ncsu.edu
Subject: Re: AUDIO GEEKS

>
> Bob, you just made my day.

Yer velcommen.....

> I have noticed this disturbing trend during the hamfest season here in FL.
> Audio geeks competing with me for things like tubes, sockets, transformers
> etc. Stuff that used to be given away is now like gold !!

Aint that da pits!

> Ever talk to one of these audio nuts ? Their understanding of electronics is
> something akin to astrology. They do stuff like paying $1000 for cables to
> connect the speakers to the amplifier. When I tell them that 10 gauge house
> wiring would work just as well, they turn up their noses.

This is frightening...... I guess they will burn up more tubes than required
over the long haul.

They speaketh strange toungues of ill-learned and hideous blasphemy
of the words of ancient scholars and alchemists..... (in other words

most of them don't really know what they are doing, much less how to design anything and keep it running, actually using tubes --- they run with too much hearsay and mumbo jumbo).

You know, you can take good ordinary welding cable and make monster speaker cables, if you know what you are doing..... (:+}}.... lemmme seee, at 100 dollars a foot, that would pay for my boatanchors.....!
I can see it now...... MONSTER SPEAKER CABLES CUSTOM MADE TO SUIT!
ONLY $99.99 PER FOOT! BUY IT NOW!

Who was that that made the comment about someone born every minute.....

> I saw a comment that someone is keeping certain tubes in a safety deposit
> box !!!

I have a good friend that keeps some Hudson filament audions that way.

> The "Radiotron Designers Handbook" used to be $5 a copy. Now it is $60 !!!

Ye needeth sallieforth to yon junque booksellers redoubt and there be a fine place for findething such bookes of the ancients.....

I get good deals on such things around off campus used book shops. Since everyone is into transitors, computers, etc., the tube stuff does not jump in price usually, unless a very sought after work.

If I must have a particular title from the early days, I deal with one bookseller that attends the AWA meets that I can trust. He always has what I want, albeit at fair but not cheap prices.

> I can not find a pair of #10 triodes for my 1941 BC-430 transmitter. This
> thing qualifies for the AWA OT contest. But no tubes, no signal.

If you have 6A3's you might be able to sub them. The pinout is the same. You will have to reduce voltages slightly to keep the 6A3's within spec, or temporarily add an additional filament dropping resistor inline. Alternatively, look for 801A's (also scarce now). The 6A3's sub nicely for 10's in my Hartley oscillators.

> Glad someone has the same point of view on this !!
>
> 73 KF5N
>
>
>
> --
> Regards,
> Greg Raven

> Renaissance Engineering
> egr002@email.mot.com
>

73/Bob/NA4G

From boatanchors@theporch.com Thu Apr 13 16:55:14 1995
Date: Thu, 13 Apr 1995 13:30:17 -0500
Message-Id: <m0rzTWp-000EptC@dna.metronet.com>
From: kmccoy@dna.metronet.com (Kevin McCoy)
Subject: Re: AUDIO GEEKS

Bob (rdkeys@unity.ncsu.edu) wrote:

>You know, you can take good ordinary welding cable and make monster
>speaker cables, if you know what you are doing..... (:+}}.... lemmme
>seee, at 100 dollars a foot, that would pay for my boatanchors.....!
>I can see it now...... MONSTER SPEAKER CABLES CUSTOM MADE TO SUIT!
>   ONLY $99.99 PER FOOT! BUY IT NOW!

I heard a salesman in an audio shop tell his customer, who was loaded down with all manner of monster cables and such, to make sure that the left and right cables were exactly the same length, even if he had to coil some of the excess in one side. The reason given? To prevent the difference in *signal delay* though the cable from causing "phasing" distortion!

-- Kevin KJ5PM

From boatanchors@theporch.com Thu Apr 13 17:31:59 1995
Date: Thu, 13 Apr 1995 14:15:49 -0500
Message-Id: <9504131906.AA21995@uvs1.orl.mmc.com>
From: padgett@tccslr.dnet.mmc.com (A. Padgett Peterson, P.E. Information Security)
Subject: Re: AUDIO GEEKS

>I heard a salesman in an audio shop tell his customer, who was loaded
>down with all manner of monster cables and such, to make sure that the
>left and right cables were exactly the same length, even if he had to
>coil some of the excess in one side.

Lessee the chrono-symplastic infidibbliun causes the coiled part to create a resonant field negating the 1.67 ns/foot (real world, not Hopper) delay caused by the longer wire. Did he also sell him the laser surveying tool necessary to determine the exact point in the room he/she/it/other needed to listen from ? (sound travels at about 1ms/foot or at 1/10^6 the rate of the wire propagation).

P.fla

From boatanchors@theporch.com Thu Apr 13 17:47:45 1995
Date: Thu, 13 Apr 1995 16:08:24 -0500
Message-Id: <d0arRDA000000000@MHS>
From: RICHARD_HUMPHREY@hp5200.desk.hp.com
Subject: Re: AUDIO GEEKS

Kevin added:

>I heard a salesman in an audio shop tell his customer, who was loaded down with all manner of monster cables and such, to make sure that the left and right cables were exactly the same length, even if he had to coil some of the excess in one side. The reason given? To prevent the difference in *signal delay* though the cable from causing "phasing" distortion!

How can they be made the same length by coiling the excess? (Years ago, a friends dad bought a fishing boat. He didn't like all the RG-8 coiled up in the bilge, so he whacked it down to just long enough to reach the depth sounder transducer. Sure messed up the depth calibration!)

My audio geek can top your audio geek. I used to work with one of these wackos, and some of his theories were truly astounding:

1. Swap the speaker cables end for end to see which way they sound best. The weave of the wire affects the sound.

2. Amps on aluminum chassis sound different from amps on steel chassis. The metal influences the ground currents flowing in the chassis, which can then be heard in the sound.

3. Speaker cable must be burned-in before the sound reaches its best quality. (Someone was actually selling a speaker cable burn-in box. Pumps lots of amps through the wire to age it correctly. Not just a DC power supply, much better!)

4. Rip out the 14 or 16 ga AC line cord and replace with monster cable for better transient response. (Do you plug the hi-fi into the dryer outlet?)

5. Never splice a cable. A splice ruins the sound.

6. Speaker cable must be made from oxygen free copper.

7. Phase both channels from the phono cartridge so that the first cycle at the start goes positive, never negative. You don't want to listen to the music 'inverted'.

And I thought hams had some silly ideas!
Richard

From boatanchors@theporch.com Thu Apr 13 18:24:08 1995
Date: Thu, 13 Apr 1995 16:15:08 -0500
Message-Id: <199504132114.AA15368@interlock.wdni.com>
From: "Turini, Bill" <turinib@wdni.com>
Subject: Re: AUDIO GEEKS

I remember in one April issue an audio magazine did a tongue in cheek article about using OFHC (Oxygen Free High Conductivity) Copper rod with welded connections to provide the maximum signal path :-)

Bill KA4GAV/7

From boatanchors@theporch.com Thu Apr 13 21:57:27 1995
Date: Thu, 13 Apr 1995 19:22:06 -0500
Message-Id: <9504140019.AA03200@texan.frco.com>
From: bill@texan.frco.com (William Hawkins)
Subject: Re: Audio geeks

You know, ever since the beginning, savvy audiophiles knew it was the sound reproducers - not the tubes or the cables - that limited the quality of the sound. The best thing I ever heard was "binaural" back in 1954. A recording was made with two separate tracks on one disk, from microphones spaced by a model of a human head to emulate ears. Played back in headphones, from a tone arm with two cartridges, it was like being in the concert hall. Using speakers ten feet apart produces a pale imitation of that sound. Most people are impressed by sound pressure levels, not accuracy of reproduction.

If the tubes ever become too rare to allow their use in AM, perhaps we can participate in the feeding frenzy by designing or repairing kilowatt triode amplifiers in the DC to 20 kHz range.

I can't find it now, but the March Antique Radio Classified had an ad for the Chezk tube sold by Dr. Ricardo Korn (?), $380 for a matched pair. A pair of KT-88's is $175.

So it goes.

Bill Hawkins bill@bvc.frco.com

From boatanchors@theporch.com Thu Apr 13 19:39:08 1995
Date: Thu, 13 Apr 1995 17:31:42 -0500
Message-Id: <199504132230.PAA03719@hobbes.UCSC.EDU>
From: haynes@cats.ucsc.edu (Jim Haynes)
Subject: Book reference

Here's something I found in the library catalog (while looking for something else)
Abernathy, Marlo G., 1905-
Historical development of U.S. Navy radio to 1929. [19--].

From boatanchors@theporch.com Thu Apr 13 23:34:47 1995
Date: Thu, 13 Apr 1995 21:03:47 -0500
Message-Id: <950413220215_82574429@aol.com>
From: W7FG@aol.com
Subject: Collins 75A-2-A (Note last A)

I picked up a collins 75A-2-A receiver at the Joplin, MO. hamfest   on Saturday. I was real
excited until I got to looking at it later in the day, and less so after cranking it up this morning with power and antenna.

It's got a 2nd source product detector pluged into the NBFM socket.
BFO is using fixed capacitances to switch BFO freq.
Crystal filter assembly, identical to that found in 75A-3's.
Commercial grade PC board bolted on to the back of the Crystal filter assembly with all
kinds of Caps etc. on it, and dozen or so wires heading below chassis.

Do these mods sound familiar to anyone?

Whats the story on 75A-2-A Last A was a shocker!!

73's Gary

From boatanchors@theporch.com Thu Apr 13 09:30:56 1995
Date: Thu, 13 Apr 1995 06:38:24 -0500
Message-Id: <199504131136.AA11893@shore.shore.net>
From: Michael Crestohl <mc@shore.net>
Subject: DAYTON'95

Greetings to all Boatanchor enthusiasts:

Well, it looks like I'm gonna get to Dayton again - only hope we don't get too wet this year =:^>. We will be staying at the old El Cheapo Ham Ham Hideaway No-tell Motel in Xenia (513) 376-8124 on Thursday and Friday nights.

Accompanying me will be my lovely wife Cynthia (VE2QF). If you spot a lovely young lady dressed from head-to-toe in contemporary L.L.Bean, that's her! I won't be too far away. I'm harder to spot - I don' need no stinkin' badges! I usually dress in exotic military camo or some kinda Russian mil jacket (my favorite is a black Naval Infantry "Ike" jacket, so its not too hard to spot if you know what yer looking for. I'll most likely be prowling around the flea market cursing out the greedy dealer capitalist profiteering running dog pigs and having a ball trying to embarass the bastards. I don't do any serious buying at Dayton unless its something I really want and don't mind getting porked or its a helluva bargain. Inside I like to ask the hired help questions they'll never answer about the latest rice-burning consumer radios and in general being a pain in the ass.

Cynthia and I are looking forward to the AM FORUM and other get-togethers with real AMATEUR radio ops, heavy metal, firebottle technology enthusiasts, CW and AM buffs and all-round great guys and gals. If you're staying in the Xenia area please feel free to give us a jangle on the dangle (phone number above). Cynthia and I will be bringing our little two-meter CB walkie talkies and will probably be monitoring the agreed-upon frequency (believe its .11). We hope to get to the BA-LIST get together too.

In anticipation of a great weekend.......

Michael Crestohl VE2XZ/W1 also KH6KD/W1

From boatanchors@theporch.com Thu Apr 13 15:39:07 1995
Date: Thu, 13 Apr 1995 12:26:28 -0500
Message-Id: <199504131724.AA19181@interlock.wdni.com>
From: "Turini, Bill" <turinib@wdni.com>
Subject: Equipment for Fix'n BAs

I'm starting to build up more test equipment for fixing BAs. I have an HP sig gen and an HP 10Mhz counter. Was looking to buy an HP 410C, but the guy at Tucker's said that they were $995, but a Hickok clone (1605M) was as good and only $169 with RF probes, etc.

Anyone have any comments on the Hickok and suggestions for other test equipment? I'm also looking for a toob tester, and would appreciate recommendations on them.

How about a test equipemnt FAQ?

Bill KA4GAV/7
Weyerhaeuser Co.

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From boatanchors@theporch.com  Thu Apr 13 16:31:19 1995
Date: Thu, 13 Apr 1995 13:07:21 -0500
Message-Id: <199504131806.OAA02051@shiva.shiva.com>
From: John Shriver <jas@shiva.com>
Subject: Re: Equipment for Fix'n BAs

If it is $995 at Tucker, it is probably under $100 at a flea.
Tucker's prices are crazy!  Their primary market is DoD contractors
who need the exact piece of obsolete test gear called for in some MIL
contract or spec.  Davilyn is in the same racket.  Stay away from both
unless you know the real market price for your purchaser.

That HP 410C meter was only $515 new in 1972!  It's not uncommon, I'm
sure I've seen those many times here in Boston.

You can probably get a brand new DVM with better specs for less than
$150.  Moreover, it won't have the stupid permanently attached probes!

Look at the advertisers in Nuts & Volts, call them, you can do much
better on that HP even at retail.  Hell, here's an ad in the March
1995 Nuts & Volts: HP 410C $100, 513-658-4951.

From boatanchors@theporch.com  Thu Apr 13 16:37:26 1995
Date: Thu, 13 Apr 1995 13:15:33 -0500
Message-Id: <v02110106abb3174a73e6@[140.243.30.128]>
From: steve@hi.com (Steve Byan)
Subject: Re: Equipment for Fix'n BAs

>Was looking to buy an HP 410C, but the guy=20
>at Tucker's said that they were $995,

DANGER! DANGER! Warning Will Robinson!

I just bought an HP410C from someone on the list for $90. As I recall,=
 Tucker was selling them in their catalog in the $200 range. The guy at=
 Tucker's is doing a bait-and-switch.

>but a Hickok clone (1605M) was as good=20
>and only $169 with RF probes, etc.

Doesn't Fair Radio have these for around $70 or so?

>Anyone have any comments on the Hickok and suggestions for other test=20
>equipment?  I'm also looking for a toob tester, and would appreciate=20
>recommendations on them.

When it comes time, I'm going to be looking for a military TV-2 tube tester.=
```

The TV-7 is most common, but some of the boatanchor HP test equipment (like=
the HP 650A) uses tubes selected for Gm, and the TV-7 won't measure Gm,=
while I've been told that the TV-2 will.

>How about a test equipemnt FAQ?

I've collected some postings on scopes and tube testers; are you=
volunteering to edit a FAQ? :-) If so, I'll email my clip-files to you.

Regards,
-Steve

BTW, I stumbled over an HP-202 function generator at Linear Electronics in=
Waltham (if you've been there, you know I mean it literally) and couldn't=
resist bringing it home. Anyone have a manual they'd be willing to copy?

```
Steve Byan                                    internet: steve@hi.com
Hitachi Computer Products (America), Inc.  =20
1601 Trapelo Road                             phone: (617) 890-0444
Waltham, MA 02154                             FAX: (617) 890-4998
```

From boatanchors@theporch.com Thu Apr 13 17:27:57 1995
Date: Thu, 13 Apr 1995 13:44:27 -0500
Message-Id: <9504131839.AA21889@uvs1.orl.mmc.com>
From: padgett@tccslr.dnet.mmc.com (A. Padgett Peterson, P.E. Information Security)
Subject: RE: Equipment for Fix'n BAs

Bill rites:
>I'm starting to build up more test equipment for fixing BAs. I have an HP
>sig gen and an HP 10Mhz counter. Was looking to buy an HP 410C, but the guy
>at Tucker's said that they were $995, but a Hickok clone (1605M) was as good
>and only $169 with RF probes, etc.

Sounds like a prime candidate for my pair of HP-150 scopes. ->FREE<- All that
is required is a strong back (nominal charge for the factory manuals 8*).

"Somewhere West of Orlando",
Padgett

From boatanchors@theporch.com Thu Apr 13 20:16:20 1995
Date: Thu, 13 Apr 1995 17:26:44 -0500
Message-Id: <950413182544_82322853@aol.com>
From: JosephWP@aol.com
Subject: Re: Equipment for Fix'n BAs

>>>
the TV-7 won't measure Gm,= while I've been told that the TV-2 will.
>>>

My understanding is that the TV-7 does measure Gm. I remember seeing a chart that converts the meter readings to Gm - cannot remember whether it was in an addendum to the tech manual or from another source (perhaps the TV-7 article in ER).

Joseph Pinner +
Lafayette, LA
KC5IJD
EMail: josephwp@aol.com

From boatanchors@theporch.com Thu Apr 13 21:59:52 1995
Date: Thu, 13 Apr 1995 19:02:35 -0500
Message-Id: <199504140001.RAA23374@mailhost.primenet.com>
From: nx7u@primenet.com (Scott Townley)
Subject: Re: Equipment for Fix'n BAs

At 12:26 13.04.1995 -0500, Turini, Bill wrote:
>
>I'm starting to build up more test equipment for fixing BAs. I have an HP
>sig gen and an HP 10Mhz counter. Was looking to buy an HP 410C, but the guy
>at Tucker's said that they were $995, but a Hickok clone (1605M) was as good
>and only $169 with RF probes, etc.
>
>Anyone have any comments on the Hickok and suggestions for other test
>equipment? I'm also looking for a toob tester, and would appreciate
>recommendations on them.
>
>How about a test equipemnt FAQ?
>
>Bill KA4GAV/7
>Weyerhaeuser Co.
>

Well, the LAST place you want to shop for test equipment is Tucker's, unless you don't mind paying top dollar for stuff. At least you do get certified working and accurate equipment.

I've had excellent luck buying stuff just from hamfests, newspaper ads, Yellow Sheets, Nuts+Volts ads, auctions, etc. Sometimes there's some minor maintenance problem, but if you can fix BA's then it shouldn't be a problem.

The key, like any surplus activity, is to stick with the right vintage and manufacturer. You *cannot* go wrong with HP. Their stuff seems to be made to last 1000 years. GR (General Radio) is excellent as well, and some of their equipment is truly art.

Also, there's always certain pieces that fail the same way, and you need to be aware of the potential repair costs/probability of failure when you're looking at the item on someone's table.

OK, here's stuff you'll want, eventually:

HP410B/C VTVM. The B is just fine (the C has solid state innards and a detachable RF probe). They can be found at fleas for about $50 or so, complete. The trick is to get one with a *working* RF probe. The probe uses a 2-01C diode, extremely difficult and expensive to replace. Lots of shady characters will try and sell them with the diode removed from the probe body (you can check by unscrewing it; pretty easy). An equivalent VTVM is the ME-26 series; it's literally a militarized HP410B. (p.s. you can have mine for $40 plus shipping, including manual).

Sig Gen (you've got one): best is HP606A/B. Going flea rate is around $100-$150. Hollow state.

Counter: HP5245L are plentiful and inexpensive now, averaging $50-$120. They go to 50MHz and support a wide variety of plugins that go up to 18 GHz!

Plain ol' multimeter: HP400. Prices vary widely, I've seen them from $20 to $250!

Q-meter (really handy for radio work): the standard is the Boonton 260A (square meters). The older Boonton 160A is electrically equivalent. These have sensitive thermocouples that are essentially irreplaceable when they burn out. Applying AC power and increasing the "xQ"knob for meter deflection will show a properly working thermocouple. Price: $50-$100.

Wattmeter: can't beat the Bird43.
****
Now for the fancy stuff:

Spectrum Analyzer: widely available and not too expensive is the HP 141T series. Actually there's a minimum of three components necessary: HP141T (display), HP8552A/B (IF section), HP8553/8554/8555 (RF Section). RF sections work up to 110MHz/1300MHz/18GHz respectively. Can get a complete 141T/8553 for around $1100, with 8554 about $1300, with 8555 about $1500. They can be found quite a bit more cheaply if you look hard and are lucky (I have *all* the components listed for about $1600). The 8555 (microwave RF one) has a very sensitive input mixer that frequently is fried. It is still serviceable but expensive to fix (not sure exactly how much). No way to check until you try to measure something.

Calibrated Receiver: almost as good as a spectrum analyzer is a "Frequency

Selective Voltmeter" or "Selective Level Meter". HP310 (10 MHz) or HP312 (18MHz) are outstanding calibrated receivers. They have IF filtering, demodulation, etc., just like a regular receiver, with a digital frequency readout and *calibrated* power level measurement, from -120 dBm to +20 dBm. These can be found for $100-$150 usually.

Antenna Bridge: if you do transmitting occasionally and like to mess with antennas the GR 1606 or GR 916 impedance bridges are a must. True works of art, with prices to match. They measure R and X with an externally applied source and detector (HP312 works good) up to 60 MHz. Needs GR connector-adapters. Also expensive; GR1606 for under $250 is a find and GR 916 for under $150 is a very good deal. Difference between them is just age and size of cabinet (916 at least twice as big). Sometimes the input transformer gets blown out when dummies transmit into them; again, no way to tell unless you actually try to use it.

Would be glad to comment further, more recommendations, especially sources, etc., either directly to interested parties or on the list if enough interest.

Scott Townley
nx7u@primenet.com

From boatanchors@theporch.com Thu Apr 13 23:43:40 1995
Date: Thu, 13 Apr 1995 21:03:07 -0500
Message-Id: <9504140149.AA23175@uvs1.orl.mmc.com>
From: padgett@tccslr.dnet.mmc.com (A. Padgett Peterson, P.E. Information Security)
Subject: Re: Equipment for Fix'n BAs

How big is a TV/7 ? (have never seen one) That "relative" scale sounds a lot like the "English" on my 533A and the scales sound about the same also except mine lacks the 30,000 scale. If the meter is small then I suspect it must be a clone of something like the bity 600, the 533A is about 18"wide x20"high (cavity at top for lads & manuals) x3"deep & the meter face is about 3" square with plenty of room for the scales.

Must admit was taken by the polished wood case when first seen as much as by all the knobs and sockets and buttons but on reflection it seems to have just the right number of each. Have learned to follow instincts when knowlege is lacking. Paid about $70 dollars for it I think (talked the guy into taking the Heath filament tester I picked up two rows before as part swap, no was $70 cash plus the Heath so $75) had manual, schematic, and "obsolete" tube roll included. I'm happy.

Warmly (ceiling fan & a/c tonight too 8*)
Padgett

From boatanchors@theporch.com Thu Apr 13 13:17:03 1995

Date: Thu, 13 Apr 1995 09:47:48 -0500
Message-Id: <9504131445.AA14800@speckle.ncsl.nist.gov>
From: morgan@speckle.ncsl.nist.gov (Roy Morgan)
Subject: Re: Equivalent prices

Bob Fabris wrote:

> There have been some words on what the current price of an old piece of
> gear might be. The March issue of the MidAtlantic Antique Radio Club
> contains a Consumer Price Index chart ...

Hooray for Radio Age, and MAARC. (I did the membership function for years, and in addition helped mail every last one of them.)

As the just-now-former membership chair, I invite any and all to e-mail his or her mailing address for a free sample issue (the very one mentioned, perhaps!)

(I'm still going to be one of two people mailing every last one of them...)

About MAARC:

The Mid-Atlantic Antique Radio Club is the second largest club of it's kind.

We have:

- monthly meetings north of DC with: sales tables, program and auction
- a GOOD newsletter, now bigger and better (We've joined with Radio Age)
- free monthly ad for members (up to 100 words)
- 900+ members all across the states, 30 overseas
- tube sales for members
- COMPLETE schematics and service info library ($5.25 first set, $4.50 each additional one)
- annual picnic and auction event in the Fall
- annual Radioactivity event with classes, flea market, and auction in JUNE.

We have a great club, and we've enjoyed an improved and expanded newsletter since we took over the pupblication of Radio Age. The annual radio meet, "Radioactivity", is held in New Carrolton, MD in mid-June.

For a sample issue and membership form:
 Use e-mail and send your address to me: morgan@speckle.ncsl.nist.gov
(Note: dues are $20/year, $40 for 25 months, $60 for 38 months.)

Future meetings:

Sunday, April 23rd, Monthly meeting. 2:00 PM   Note SUNDAY, 2 PM.

MAARC meetings are held at the Seventh Day Adventist Church,
Burtonsville, MD.

>From the south: travel around I-495, the capitol beltway to Rt. I-95 North.
Exit at MD 198, Sandy Spring Road. Go West 1.5 miles to McNew Road (traffic signal).
Turn left (south). The Church is on the left. Park behind the church in the parking lot, or on McNew Road. Do not block the fire lane. The entrance is at the rear of the chuch building.

--
Roy --

Roy Morgan / Tech A-266 / NIST / Gaithersburg MD 20899
(National Institute of Standards and Technology, formerly NBS)
301-975-3254 Fax: 301-948-6213 Internet: morgan@speckle.ncsl.nist.gov
---

From boatanchors@theporch.com Thu Apr 13 21:51:20 1995
Date: Thu, 13 Apr 1995 19:07:34 -0500
Message-Id: <199504140006.RAA24241@mailhost.primenet.com>
From: nx7u@primenet.com (Scott Townley)
Subject: Fix'n BA's (more)

I forgot o-scopes!

HP does not (IMHO) make very good oscilloscopes. Their trigger circuitry is much more difficult to adjust and you usually need to baby them quite a bit to get useful displays. I own an HP1722B (275 MHz) which I like but will gladly trade for another when the chance comes along.

Of course, the main bit in 'scopes is bandwidth, and the main manufacturer (or at least best) is Tektronix.
Unfortunately I can't remember their model number nomenclature!
Their 500-series 100 MHz scopes are around $300-$400.
Their 500-series 200 MHz scopes are about $100 more.
Storage capability is expensive, at least $250-$300 more on top of standard pricing.

Darn! it's driving me nuts that I can't remember the model numbers.
Hopefully someone can help out...
scott nx7u@primenet.com

From boatanchors@theporch.com Thu Apr 13 11:06:08 1995
Date: Thu, 13 Apr 1995 08:18:36 -0500
Message-Id: <9504111927.AA20746@wrdis01.robins.af.mil>
From: lakeith@wrdis01.robins.af.mil (Larry Keith)
Subject: FNFF Eyeball QSO # 2 (Attendees update)

OK, as of 4-13-95, at 0915 local...

Here is what I have:

Larry, KQ4BY
Jack, WB8BFS, + 1
Jack, W4PPT, +16 (includes Sandy, Bob Stafford and Bill Stafford, Dave and another Sandy, Harve, W4WDH + Yvonne, AE2T + 1 and 7 unnamed GERATOL types)
Tony,K4KYO
Paul, WA9VYB + 1
Tom, K9TA
Michael, VE2XZ/W1
Cynthis VE2QF/W1
Wayne, N1FTN
___I'm missing someone___??

That makes 24.. I will cal the restaurant and upgrade the reservations, this morning.

At this point, I have a reservation for 20 in my name at the Casa Lupita Restaurant at 1535 Miamisburg - Centerville Road. The restaurant is just east of the I-675. You can get to it from I-75 also. Miamisburg - Centerville road is also know as SR 725.. If you need help, just ask for directions to the Dayton Mall..
If all else fails, call the Casa Lupita at 433-4431..

I intend to be there by 8:00 PM and will monitor the 145.11 repeater..

We will order from the menu.. Note that Casa Lupita will add a 15% gratuity to checks for large groups. So, don't tip 'em twice!!

Corrections and additions to : lakeith@robins.af.mil

73,

Larry, KQ4BY

From boatanchors@theporch.com Thu Apr 13 09:59:56 1995
Date: Thu, 13 Apr 1995 07:03:36 -0500
Message-Id: <9504131204.AA10291@wrdis01.robins.af.mil>
From: lakeith@wrdis01.robins.af.mil (Larry Keith)

Subject: Re: Hammerlund HQ 180 worth

In your message of 12 Apr 1995 at 1848 EDT, you write:

> tubes! I would also like to know what the group thinks is a "going" price.

Well, here is another set of data.. This is the Hammarlund portion of the Bone Yard Blue Book...

73,

Larry, KQ4BY

>

Bone Yard Blue Book
Version 12
April 7, 1995
Prepared by Larry Keith, KQ4BY, lakeith@robins.af.mil

This listing was prepared from for sale and bone yard report postings to the boatanchors list as well as postings from the rec.radio.swap newsgroup. As usual, comments should be addressed to lakeith@robins.af.mil. Thanks to all the folks who posted the the information.

Date	Model	Cond	Asking Price
** Hammarlund			
950316	HQ-105TR	Good	$135
950125	HQ-110 Receiver	Good	$100
950316	HQ-110 Receiver	Good	$90
950406	HQ-110 Receiver	Fair	$65
950215	HQ-120 Receiver	Fair	$50
950227	HQ-120X Receiver	Poor	$95
950331	HQ-129X Receiver	Good	$150
950316	HQ-145 Receiver	Good	$50
950201	HQ-170	Unk	$160
950227	HQ-170	Unk	$150

950316	HQ-170	Good	$125
950331	HQ-170	Good	$200
950124	HQ-170 Receiver	Unk	$175
950124	HQ-170 Receiver	Unk	$200
950215	HQ-170 Receiver	Unk	$150
950406	HQ-170 Receiver	Exc	$225
950201	HQ-170A	Unk	$180
950227	HQ-170A	Unk	$150
950227	HQ-170A	Unk	$169
950124	HQ-170A Receiver	Unk	$195
950124	HQ-170A Receiver	Unk	$220
950215	HQ-170A Receiver	Unk	$169
950316	HQ-170AC Receiver	Good	$135
950123	HQ-180 Receiver	Poor	$165
950124	HX-50 Transmitter	Exc	$195
950322	HX-50 Transmitter	Fair	$125
950316	HX-50A Transmitter	Good	$135
950124	HXL-1 Linear Amplifier	Exc	$295
950322	HXL-1 Linear Amplifier	Fair	$300
950316	SP-600 w/original cabinet	VGood	$350
950406	SP-600-JX21 Receiver	Exc	$350

From boatanchors@theporch.com Thu Apr 13 11:29:07 1995
Date: Thu, 13 Apr 1995 08:39:55 -0500
Message-Id: <950413093806_81788094@aol.com>
From: CarlHeintz@aol.com
Subject: Re: Hammerlund HQ 180 worth

Thanks to all that replied on the HQ-180 values. They were all over the board, from $ 150 to $325.   Now, I talked to a few dealers, and they maintain that a HQ-180c in primo condition can be worth almost $400! That, of course sounds like the "greater fool" value to me!

The most common price seemed to be in the $225-250 range, which seems pretty much as expected.

The HQ-170 values ranged from $125 - $250, with the average about $200 for a primo clean one.

From boatanchors@theporch.com Thu Apr 13 13:29:30 1995
Date: Thu, 13 Apr 1995 10:16:27 -0500
Message-Id: <9504131450.AA20950@uvs1.orl.mmc.com>
From: padgett@tccslr.dnet.mmc.com (A. Padgett Peterson, P.E. Information Security)
Subject: Re: Hammerlund HQ 180 worth

>Now, I talked to a few dealers, and they
>maintain that a HQ-180c in primo condition can be worth almost $400! That,

>of course sounds like the "greater fool" value to me!

>The most common price seemed to be in the $225-250 range, which seems pretty
>much as expected.

Not surprising, the general rule of thumb is that for a dealer to be sucessful they *must* expect to double their investment so $200-$225 is what they would expect to pay. Problem is that most people look at the wholesale/retail equation from the top and "30%" off looks good but miss that the "dealer cost" is about another 10% down or 40% off list which is really a 66% mark >up< *and that is on known commodities with a steady demand*.

(Cars are something else entirely with charge-backs and quarterly quota bonuses a big function of dealer profit and is why a dealer can sell cars at "dealer cost" and still take money to the bank).

Not saying this is right or rong but just is. The other half of the equation is that the time to get a deal from a dealer is when he is starting to pack up because that is when he has to consider loading/unloading and the cost of getting home. At that point recovering his sunk cost today is often more important than holding on to the sucker 'till the next meet. Particularly since liquid cash is more important in the interim because it is between meets that he can use the lessons learned at this meet about what is salable for the next one and what he needs to stock up on. Eating is often another incentive.

Further, at closing, he does not have to worry about you "retabling" it and competing with him. (Psych 101 - people often suspect others of their own vices).

Now that you have a good idea what his sunk cost is, you know what can be offered without insult and when. And yet another reason to sleep late 8*).

Warmly,
Padgett

From boatanchors@theporch.com Thu Apr 13 14:51:01 1995
Date: Thu, 13 Apr 1995 11:27:45 -0500
Message-Id: <2F8D4F59@smtpgate.rfc.comm.harris.com>
From: "Gable, Edward M" <emg@rfpo2.rfc.comm.harris.com>
Subject: Help TMC GPR-90 RX Problem

Hi Gang: I have two GPR-90's with the same wierd RF/Mixer/I.F. problem which is very difficult even to describe. Here goes: RX's are stone deaf, except for lowest three bands where they are only seriously deaf. When tuning the S-meter acts as though ur tuning across signals, but this is with antenna disconnected and input shorted. Weak signals can be changed

in frequency by using the antenna peaking control ! I'm wondering if my RF Amp is oscillating and the LO isn't, or something strange like that. As both of my GPR-90's are doing the same thing, I'm hoping that some TMC expert out there will pop in and say ...."yeh, that's always the 2nd RF screen by-pass open....." or something like that. Hey, ya never know.
Any ideas ? Regards, Ed @ Rochester

From boatanchors@theporch.com Thu Apr 13 06:02:07 1995
Date: Thu, 13 Apr 1995 03:15:15 -0500
Message-Id: <9504130813.AA20945@alpha>
From: Duncan Cadd <dcadd@luc.ac.be>
Subject: homemade vacuum

Greetings, folks, from an overcast Diepenbeek in N.E. Belgium!

Re. Bill Hawkins' query. A Geissler glow tube works at around 20mm Hg pressure. A thermionic valve needs at least 10 ^(-6)mm Hg or better - this is achievable with a diffusion pump, and can be improved by means of a getter in the bottle.

Around ten years ago, I saw a very nice display of 19th century and earlier vacuum pumps in the Science Museum, London. The displays change all the time so I'd be surprised if they're still on display. The nice thing I recall was a very simple glass pump, from I think the very early Victorian period, which had no moving parts. The thing was constructed with a couple of mercury reservoirs (it worked at room temperature) and simply by running a stream of mercury through it, it would evacuate down to the limit of the vapour pressure of mercury at room temperature - enough for a valve for sure, but a very slow process needing manual recycling of the mercury from bottom to top!!! I wish I could remember the design, but it was a very simple construction. Perhaps if you wrote to the Keeper of Exhibits, Doron Swade (I think that's her name) at the Science Museum, South Kensington, London, you could get a schematic of the thing. But it uses quite a few pounds of mercury (20 at a guess) !!!! And, sri, but I don't recall the name of the inventor!

Now, there's one for the real suckers!

73,

Duncan G0UTY / ON9CHU G-QRP 8117

From boatanchors@theporch.com Thu Apr 13 10:09:17 1995
Date: Thu, 13 Apr 1995 07:14:52 -0500
Message-Id: <m0rzNSX-000043C@next3.acme.ist.ucf.edu>
From: clarke@acme.ist.ucf.edu (Thomas Clarke)
Subject: Re: homemade vacuum

>My electronics teacher at college once made a crude triode (make
that crude

>with a Capital C). After evacuating the bulb and sealing it off, he
measured

>the characteristics and they were pathetic.

Maybe he stopped too soon. According to Bob/NA4G, almost
any triode will work in a regenerative receiver. That would
have been a truly homebrew receiver.

Tom Clarke
KE4VFH

From boatanchors@theporch.com Thu Apr 13 11:06:52 1995
Date: Thu, 13 Apr 1995 08:13:32 -0500
Message-Id: <"Macintosh */PRMD=MOT/ADMD=MOT/C=US/"@MHS>
From: Scott_Johnson-AZAX60@email.sps.mot.com
Subject: RE>homemade vacuum

RE>homemade vacuum   4/13/95
The pump you refer to is a Sprengel pump. These were used in the early
manufacture of light bulbs, they are limited in speed and ultimate vacuum, due
to the vapor pressure of the mercury, as are diffusion pumps. BTW, if anyone is
interested, I have a small Eimac glass diffusion pump for sale or trade.

The thing was constructed with a couple of mercury
reservoirs (it worked at room temperature) and simply by running a stream of
mercury through it, it would evacuate down to the limit of the vapour pressure
of mercury at room temperature - enough for a valve for sure, but a very slow
process needing manual recycling of the mercury from bottom to top!!! I wish I
could remember the design, but it was a very simple construction.

From boatanchors@theporch.com Thu Apr 13 12:28:03 1995
Date: Thu, 13 Apr 1995 09:14:36 -0500
Message-Id: <9504131440.AA101994@csemail.cropsci.ncsu.edu>
From: rdkeys@csemail

Subject: Re: homemade vacuum

>
> >My electronics teacher at college once made a crude triode (make
> that crude
>
> >with a Capital C). After evacuating the bulb and sealing it off, he
> measured
>
> >the characteristics and they were pathetic.
>
>
> Maybe he stopped too soon. According to Bob/NA4G, almost
> any triode will work in a regenerative receiver. That would
> have been a truly homebrew receiver.
>
> Tom Clarke
> KE4VFH
>

True, any triode (as well as almost any tetrode and pentode) will make a good regenerative detector. I have used things as small as acorn tubes and as big as the VT-4C/211 as regenerative detectors among triodes, and things from 6sk7's to 6146's as pentode detectors. They all work fine, if they are set up correctly, as regenerative detectors. A particularly fine combination for detector and audio amplifier is a 6V6 detector followed by a 6V6 audio stage. A 48 volts on the plate, it is very sensitive and not as prone as smaller tubes to pull or block on strong signals. But, it can emit a stronger heterodyne (a few milliwatts).

The earliest detector tubes were gaseous triodes (audions and things like the '00 and '00A tubes). They were particulary noted for being very sensitive detectors at very low voltages (18-20 volts on the plate). They did not make good audio amplifiers tho. The hard tubes like the '01 and '01A made much better audio amps and gradually replaced the gaseous detectors by about 1925 or so.

My findings are that if it will act as a tube, it will make a reasonable regenerative detector, within certain limits (like no VR-tubes need apply, or no heptodes need apply [although they would probably work], etc).

If you want to try a very odd triode as a detector or oscillator try a vacuum tube pass transistor (the 6AS7G or 6080 or 6550 work well). The gain is almost zero on these, but with regeneration, they can be rather respectable. These make good power tube subs for the 6SN7.

73/Bob/NA4G

From boatanchors@theporch.com Thu Apr 13 14:38:42 1995
Date: Thu, 13 Apr 1995 09:38:21 -0500
Message-Id: <199504131436.KAA26676@shiva.shiva.com>
From: John Shriver <jas@shiva.com>
Subject: RE: homemade vacuum tubes

>From Chaffee "Theory of Thermionic Vacuum Tubes" (1933):

"The modern developments of vacuum pumps permit a pressue of 0.0001 bar to be attained. Vacua corresponding to pressures less than 1 bar are usually classed as high vacua."

One bar is 0.00075 mm of mercury.

According to his chart, 0.0001 bar gives a mean free path for an electron of 10000 cm. (That's how far it goes before hitting an atom.)

Tubes have one hell of a vacuum.

From boatanchors@theporch.com Thu Apr 13 17:27:26 1995
Date: Thu, 13 Apr 1995 14:09:55 -0500
Message-Id: <9504131908.AA28968@lambada.oit.unc.edu>
From: terry murphy <Terry.Murphy@lambada.oit.unc.edu>
Subject: Morse

Dumbing Down

SOS for Learning (from the Editorial page- Durham,NC Herald
Sun 11 April 1995)

Getting a First Class badge in the boy scouts was made much easier some years ago when the requirements for learning morse code was dropped. Before that change, many a boy remained a Second Class scout for his unwillingness to learn dots and dashes.

And now comes the news that the Coast Guard has dropped the use of Morse code. Modern communications technology, the service says, has sent Samuel F.B. Morse's telegraphic code the way of the Pony Express.

Maybe it's a coincidence, but these developments seem to have come as society is dumbing down to accede to the protestations of those who can't or won't push the envelope of learning.

Not only must Boy Scouts no longer endure the minor rigors of learning 26 dot-and-dash letters, but most schools no longer require students to memorize Polonius' speech to Laertes or Lincoln's Gettysburg Address. We are left to wonder when the multiplication tables will fall victim to those who deem rote learning unfashionable. Learning the multiplication tables or Morse code or Hamlet's "To be or not to be" soliloquy is not easy or pleasant. Any act of memorization is a mental exercise, and exercise is hard work. But, like a bicep or a hamstring, a mind can be improved with repetitious exercise.

If we drop all the hard things as learning requirements, can flabby, undisciplined thinking be far behind ?

from de ab4vj
terry

From boatanchors@theporch.com Thu Apr 13 23:18:11 1995
Date: Thu, 13 Apr 1995 20:39:47 -0500
Message-Id: <Pine.3.89.9504131854.A29051-0100000@netcom20>
From: paul Veltman <veltman@netcom.com>
Subject: Re: Morse

>
>   Not only must Boy Scouts no longer endure the minor rigors of
> learning 26 dot-and-dash letters, but most schools no longer require
> students to memorize Polonius' speech to Laertes or Lincoln's Gettysburg
> Address. We are left to wonder when the multiplication tables will fall
> victim to those who deem rote learning unfashionable. Learning the
> multiplication tables or Morse code or Hamlet's "To be or not to be"
> soliloquy is not easy or pleasant. Any act of memorization is a mental
> exercise, and exercise is hard work. But, like a bicep or a hamstring, a
> mind can be improved with repetitious exercise.
>

You ain't heard nothing yet!
The California State Schools System has discovered that you don't need right answers in math anymore. After all, it's the process that counts, and if you understand the process, but screw up in an arithmatic mistake, then that's OK. Its all in how we feel about the problem.

73

Paul WA6OKQ

From boatanchors@theporch.com Thu Apr 13 23:18:44 1995
Date: Thu, 13 Apr 1995 20:36:45 -0500
Message-Id: <9504140123.AA23101@uvs1.orl.mmc.com>
From: padgett@tccslr.dnet.mmc.com (A. Padgett Peterson, P.E. Information Security)
Subject: RE: Morse

Oh I dunno, ASCII & EBCDIC were harder to learn, Mose is on a par with Baudot. My problem is defective hearing (hearing aids in both ears) however am sure that there is some way to compensate. Fact is that in my yout when I had the ability was insufficiently motivated.

True something is lacking in today's education, five years of singing about some hindu with many arms or was it a greek ? Did make it easy to pick up romantic languages so naturally what I needed was technical German & Russian (IMHO St. Cyril shoulda stuck to the English alphabeta but once transliterated it looks a lot like French).

Courses that stuck with me the most were boolean logic, set theory, linear programming, creative accounting (at GM), and a strange one called "Electro Mechanical Engineering" in which electrical current flow was expressed in therems of springs (capacitors), dashpots (resistors), kinetic energy (current) and potential energy (voltage).

Didn't make it very far as a scout myself but son made Eagle (and dad introduced the troop to tropical jungle hammocks (my back just can't take the hard ground)).
Warmly,
Padgett
(veni, vidi, fugi)

From boatanchors@theporch.com Fri Apr 14 00:26:53 1995
Date: Thu, 13 Apr 1995 21:37:25 -0500
Message-Id: <9504140232.AA23275@uvs1.orl.mmc.com>
From: padgett@tccslr.dnet.mmc.com (A. Padgett Peterson, P.E. Information Security)
Subject: Re: Morse

>The California State Schools System has discovered that you don't need
>right answers in math anymore. After all, it's the process that counts,
>and if you understand the process, but screw up in an arithmatic mistake,
>then that's OK. Its all in how we feel about the problem.

Sounds like back before the flood when I received a zero on a math paper with all right answers since that was *all* I put down. Was told I needed to "show my work".

BTW tonite we have had "Fried Ham", a daughter who was "Ground(ed) Ham",
does that make my son's boy scout reminice "SPAM" 8*).

P.fla

From boatanchors@theporch.com Thu Apr 13 11:52:47 1995
Date: Thu, 13 Apr 1995 08:39:12 -0500
Message-Id: <9504131302.AA20313@uvs1.orl.mmc.com>
From: padgett@tccslr.dnet.mmc.com (A. Padgett Peterson, P.E. Information Security)
Subject: RE: Prices of collectibles

Just some thoughts: First, without inflation you have stagnation since there is no reason for capital to be invested. The general rule is not that zero is desirable but that anything under 5%/year is bad.

Vendors are not in business for their health, they have expenses to meet and families to support. Am not saying this as an excuse, rather so that there will be some understanding. The fact is that the members of this group, as enthusiasts and (admitted or not) collectors, are futher up the Maslov chain than the vendors - you are in it because you enjoy it & if something else comes up, can shelve it for a while. For a vendor, if he/she does not vend, they do not eat. Being lower on the food chain, they try harder.

In fact, truth be told, most of them are jealous/envious of you who can play at it (why I said going to a swap meet should be a luxury for relaxation/ vacation) and are resentful of those who show up with BA's at what they consider "low" prices. From a slightly deranged point of view, those vendors who race around buying up low priced equipment are not "snapping up bargains", they are eliminating competition !

Want to drive a vendor out of business: fill him up with big things priced too low to be resisted but too high for him to sell for a 50% profit. Alternative: wait to show up until 11 am and then price your stuff 20% under his. You can, he can't. In fact he is *relying* on you to show up early and sell early so he can sell later at *his* price without competition.

The fact is that looking on the vendors as "driving up prices" is looking at the wrong end of the supply/demand equation. Prices are set by what the market will accept and it does not matter what you think the prices "should" be. The clueless are going to show up later (and are clueless because they spend their time at $250k/year dental practices and not researching BAs - show up late because this is the only day they have to sleep in & are exhausted from the above) and all they will see are the professionals.

Most enthusiasts put a higher premium on pricing low & selling quickly so they can enjoy the show *because they have that luxury*. The vender is there to survive. Promoters are aware of this. Part of the reason the premium tables are inside and a well run show will channel all attendees past them first and put the tailgaters out in the back 40 *even though they could have been located much closer to the entrance* (check it out - why do you think vendor parking at most big shows is in front and tailgater parking in back instead of vice da verse ? At some you have to walk past locked gates separating parking from TG area to get to the main entrance. Think it is just so the ticket area is in the hall ? Think again while carting that BA a mile back to your car, ticket takers/sellers/booths are cheap commodities and can be put anywhere - I call it the "Toys-R-Us" syndrome.)

Just some thoughts.

Warmly,
Padgett

From boatanchors@theporch.com Thu Apr 13 12:25:24 1995
Date: Thu, 13 Apr 1995 09:21:38 -0500
Message-Id: <9504131419.AA14367@speckle.ncsl.nist.gov>
From: morgan@speckle.ncsl.nist.gov (Roy Morgan)
Subject: Re: Prices of collectibles

Dube wrote:

>There have been some "complaints" about pricing of collectible
>radios.
>
> One thing's for sure: you
>don't have to buy the stuff. Why unload on the seller?

A-HAH! Here is the kernel of the issue! The real motivation of the complainers, and especially those who "unload" on the would-be seller, is not to buy stuff, nor is it to get the prices down for others, nor to educate the sellers!

It is to bitch.

Some folks have to do more of this than others do. (Myself, I've never done any of it, so I can't understand why they do it. But that's what they do.)

--
Roy --

Roy Morgan / Tech A-266 / NIST / Gaithersburg MD 20899
(National Institute of Standards and Technology, formerly NBS)
301-975-3254 Fax: 301-948-6213 Internet: morgan@speckle.ncsl.nist.gov

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From boatanchors@ThePorch.com Thu Apr 13 20:15:26 1995
Date: Thu, 13 Apr 1995 17:55:19 -0500
Message-Id: <9504132310.AA1407@hqsmtp.ops.3com.com>
From: Joe Reda/HQ/3Com <Joe_Reda@3mail.3Com.COM>
Subject: RE: Prices of collectibles

Warmly Padgett's posting has pointed up something to me in this debate, something I knew but had forgotten: the fact of why I go to swap meets (other than to find stuff I can't live without . .).

When I go to swap meets or flea markets, I don't want to see professional vendors there for the most part. I'd rather see the person who has cleaned his/her garage or shack out and is selling gear for what it's truly worth (one hopes). I don't look on BAs as a "commodity" or a "good" or an "investment"; I look upon them as a hobby and a labour of love. Think about it -- if you could,
wouldn't you rather buy that HQ180C from someone who knew how to enjoy it and maintain it, rather than from someone who bought it as part of a lot, doesn't know if it works but does know what price to slap on it?

I don't intend to slam dealers here, but I've been on this scene long enough to have seen change for the worse. It's gone from enthusiasts swapping gear to having "collectible" dealers move in with their doubled and tripled prices. It's happened in the world of antique radios and now it's happening in the BA world. I would rather see dealers make their money on things other than BAs -- we don't need more generations walking by BAs with a wistful look on their faces because they can't afford a $250 Hallicrafters S-38!

I'll step down off the soapbox now . . .

Joe KC6TXU

From boatanchors@theporch.com Thu Apr 13 23:52:30 1995
Date: Thu, 13 Apr 1995 21:12:40 -0500
Message-Id: <F4DL1051.F4DL1101@mail.admin.wisc.edu>
From: TOM.A.ADAMS@mail.admin.wisc.edu
Subject: Re. Re. Newt's Firebottle

to: boatanchors@theporch.com

Hello Nick, KD4CPL.

Well, as it happened I was on duty up here in the control room the night the Gingrinch spoke his piece.

We didn't carry him live; we had more important things skeded (a Lawrence

Welk rerun), so I had to take him off the satellite with 1" videotape for delayed broadcast at a more appropriate time (2300 CDST).

In reviewing the tape for technical quality, I got to look the toob over rather carefully. I ran and reran the appropriate parts, amid comments from my undergrad student Master Control Operators of "what an a..hole!", and numerous middle fingers being hoisted toward the monitors, all in an attempt to determine tube type.

I couldn't really see enough of the base to tell if the toob was an octal or not. I'll still go with VR-150 as first choice, but as a "dark horse" second guess, I'd have to say 2050 thyritron.

73's,

Mr. T.

From boatanchors@theporch.com Thu Apr 13 17:38:50 1995
Date: Thu, 13 Apr 1995 14:18:26 -0500
Message-Id: <797800521.7377577@AppleLink.Apple.COM>
From: FRANCIS4@applelink.apple.com (Francis, Dexter)
Subject: Re2: AUDIO GEEKS

I heard a salesman in an audio shop tell his customer, who was loaded down with all manner of monster cables and such, to make sure that the left and right cables were exactly the same length, even if he had to coil some of the excess in one side. The reason given? To prevent the difference in *signal delay* though the cable from causing "phasing" distortion!

-- Kevin KJ5PM

What an ignoramus! He forgot to tell the guy about needing to put a capacitor on at the speakers to keep the impedance match correct because of the additional inductance caused by coiling the cable. ;-)

-df N0YLJ

From boatanchors@theporch.com Thu Apr 13 23:18:06 1995
Date: Thu, 13 Apr 1995 20:42:24 -0500
Message-Id: <01HPAZRPBT5E8ZE31R@delphi.com>
From: GARYGENE@delphi.com
Subject: sx115,ht32,ht33

Im looking for{a sx115,ht32b,ht33 station, can anyone help
contact gary gilbertson WB9SDA at GARYGENE@delphi.com Tnx Much

From boatanchors@theporch.com Thu Apr 13 19:33:53 1995
Date: Thu, 13 Apr 1995 17:34:19 -0500
Message-Id: <PMX-TERM-2.02-bsm2ee1-thaake-93>
From: thaake@bsm2ee1.attmail.com (thaake)
Subject: RE: TEST BA Test Equipment

RE

Keeping economics in mind I like the HP 410B. It's easy to find. Just need to make sure the tube in the probe and or the ballast tube inside for the probe is good. I have only run across one dud in the many years of the 410B living on my workbench. $10 to $25 max on the 410B. I have serveral for spares which I've never had to use. Another good find and cheap is the HP400 which is an AC only look-a-like of the 410B. Got serveral of them last year to spare for my prestine workbench unit for nothin' at Dayton. Guy had a ton of them and litteraly dumped them in my cart as I walked by his mess!!

A good military VTVM but I don't think it had as high of an operating freq. on the proble is the TS 505. Had one of those years ago and it was a trusy ole' meter.

Cheap and very good signal generators are the URM25 units that run 50Kc to 50Mc with calibrated attenuator. $25 to $75 with the accessories will bag one. There is also a VHF version, maybe it's the URM26 I don't know. I've nver had one. I use a HP 608E with the HP Syncronizer. I paid alot for it 15 years ago but I bought one for spare parts (got some weird little cavity type pencil tubes inside) last summer for $10 and one for $25 dollars. Use to be HP's bread and butter HF/VHF signal generator. Uncle same owned most of them you would think.

Military of an early HP608D(?) is the TS 510. My brother has my old one on his workbench. Good ole girl too.

For audio one of the HP 200C oscillators are great. I have a gem on the workbench and didn't have a need for a second one cause I'm loaded with more modern HP units but I found a HP 200 with a novel motor drive on it that allowed you to set a minimum and maximum sweep range and then let her rip. It's fun to watch for about 2 seconds. $10 bucks.

This stuff is built rugged but not so rugged you need a forklift to move (well maybe the 608) and it just won't quit working. I got newer stuff but I continue to use the tube HP gear cause well that's wat I'm comfortable with. Another thing, books are still easy to get or find copies of.

My luck has been poor with the TEK tube scopes. I've owned three of them and all three eventually smoked. Junk after that. The only scope that has tubes in it that to this day still works is my HP militry USM-170. Big but good enough. Got another one for parts and plug ins but never had to use them.

For tubetesters I use a TV-2 but I also have a TV-7 with an outboard adapter which has got a number of special tube sockets on it. TV-7's can be found but I'd wager to say the outboard adapter is as rare as hen's teeth. The TV-2 book says you can test any tube that you have the specs on (assuming there is a tube socket to fit even if the setup instructions are not on the toilet roll. Never tried it. LIke the TV-2 alot. Last year at Dayton a guy had brand new /TV-7s in sealed cartons for $25 bucks each! A whole stack of em'. I don't know what other tubetesters exist that are good and can be found easily. Hickok had one that I think was probably a goody but it (one I used) had a punched card that you programed the thing with. Great for fast setups. My shop had the card punch machine to punch the cards with. I've seen that tester for $25 and less but no card punch or blank cards. Definite problem.

Wat else can you guys add or suggest for a basic cheap but good test bench??

Tim WA0TSY
thaake@bsm2ee1.attmail.com

From boatanchors@theporch.com Thu Apr 13 14:47:13 1995
Date: Thu, 13 Apr 1995 11:36:47 -0500
Message-Id: <950413122029_81937751@aol.com>
From: Scgilstrap@aol.com
Subject: Transformer identifying

I was given a partially scavenged power supply chassis of true boatanchor proportions. Tubes are missing along with an unknown quantity of smaller components. What remains are some 600V oil caps, inductors/chokes the size of a No.2 can of beans, a wiring harness made with cloth covered wire (dsc or dcc maybe?) and a 4"x4"x5" tall transformer. At least I think its a transformer. Its labeled T401. The number 901013-501 appears on the top and bottom. Also on the top are the numbers N17-T-74017-4133 and CRV 30790? The bottom has a 4 x 4 matrix of posts numbered 1 thru 15. Yes #16 is an empty spot.

Now the questions. Can anyone identify this transformer?
If not, what's a good method of determining what this transformer can do? Would you ohm it out and map out all the posts to identify the various windings? What about applying a low level signal from a variac and where would you start? The missing tubes are a 5U4G and a VR105 and I guess I could trace from the tube socket pins for a 5v secondary and etc. Maybe I'm answering my own question here. But like a lot of things unknown, its certainly nicer to start out with someone experienced (like you guys) doing a little elmering for the transformerly challenged (like me).

Tnx de Stan - WB5LBH

From boatanchors@theporch.com Thu Apr 13 15:23:19 1995
Date: Thu, 13 Apr 1995 12:03:41 -0500
Message-Id: <9503137977.AA797792530@CCGATE.HAC.COM>
From: jcreid@ccgate.hac.com
Subject: Vacuum problems

Although I'm not an expert in high vacuum technology, I have messed with a lot of equipment that employs all sorts of vacuum and ion pumps. One piece of equipment in particular required pressures in the 10 to the minus 11 Torr. That's pretty low.

Anyway according to my various textbooks including "Materials and Techniques for Electron Tubes", the normal pressure inside the average vacuum tube is around 10 to the minus 7 Torr. 1 Torr being equal to 1 mm of Hg. A decent rotary vane pump might get you into the 10 to the minus 2 range if you're lucky. After that you'd need something like a diffusion pump or cryo pump to get you down low enough to evacuate a tube. I don't think our young friend boiling the beer bottles is reach the vacuum he needs.

In regards to Padgett's question about filling the tubes with an inert gas, this is what's done in the VR tubes. Even though the gas is inert, it is still a gas full of molecules and when a high enough potential is reached, the gas ionizes and the tube glows. For a normal type triode, tetrode, etc. you don't want any gas molecules in the envelope. You want the electrons to travel from the cathode to the plate without striking any molecules. Hope this helps clear the air(pun intended).

-Jim

From boatanchors@theporch.com Thu Apr 13 17:20:40 1995
Date: Thu, 13 Apr 1995 13:39:40 -0500
Message-Id: <9504131819.AA21817@uvs1.orl.mmc.com>
From: padgett@tccslr.dnet.mmc.com (A. Padgett Peterson, P.E. Information Security)
Subject: RE: Vacuum problems

Just a thought but the problem with evacuating air comes from the fact that it is a compressible gas and you can only suck so hard. An earlier post had me thinking, what if you filled the tube with an incompressible liquid that did not carry any air in suspension (mercury ?) that is reasonably dense (mercury again ?) and then evacuated it from the bottom using gravity for a collection mechanism ? Now your ponly problem is to prevent air from backfilling from the collection tank for the mercury (rubber bladder ?). Contrary to much science fiction, the problem is not one of delta pressure, is less than 15 psi, rather is one of complete removal so we either need to remove all of the molecules of air or replace all of them with something we either can remove or which does not matter (can be plated somewhere inside the toob).

Just have this feeling that there is a much easier way that doesn't suck.

(sorry).

P.fla

ps back is the daze before the USNail got computerized (and soon thereafter needed enough ZIP codes for every man, woman, child, and pet in the country (10^9 is a big number), states had abbreviations of varying lengths. Florida was FLA. Am egotistical enough to believe that PADGETT is enough on the net but hate to be repeticious.